



Webster County firm helps develop mine safety device

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(Gleaner photos by Mike Lawrence • 831-8346 or mlawrence@thegleaner.com)

A press conference and demonstration, above, was given Tuesday in Clay at Gamma Services International of the Geosteering TramGuard, a proximity detection system for underground continuous mining machines. The system automatically warns and shuts down the machine if a miner gets too close.

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The Personal Alarm Device (PAD), below, worn by the miners and the display unit that mounts to the mining machine.

CLAY -- In this little Webster County mining community surrounded by lush corn and soybean fields, technology is being developed that could save coal miners' lives.

Working with government agencies and private partners, Gamma Services International (GSI) of Clay has helped develop a mine safety system that can prevent heavy equipment underground from pinning or crushing miners.

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"It's going to save a lot of lives," declared Mark Skiles, director of technical support for the U.S. Department of Labor's Mine Safety and Health Administration (MSHA).

The TramGuard system can be installed on continuous miners, the 60-ton mobile machines used in underground mines to claw coal from the seam and load it onto conveyors.

As demonstrated Tuesday before a group of about 75 coal miners and government officials, the TramGuard system sounds a warning when a person is too close to a moving machine.

It can even stop the machine from moving closer than a few feet of a machine operator or anyone else who is equipped with a pocket-size detection device.

Most continuous miners today are equipped with remote controls, with the machine operator located several feet away.

"When they came up with remote control in the 1980s, we thought it would be a boon for safety. That's what the industry, MSHA and the unions thought" Skiles, a former miner, said.

But in fact, "It created another problem." Continuous miner operator had at their fingertips the controls to move the big machine around the mine.

But in an instant of inattention, an operator can be run over, crushed or pinned against the wall of the mine by the moving equipment.

Since 1984, 29 miners have been killed in accidents involving remote control continuous miners, including 12 since 2000, according to MSHA.

Most of those miners were killed in mishaps while the machine was tramming, or moving, to another location in the close quarters of the mine.

"You don't hear or see this on the national news, but we all know this is how coal miners die," Skiles said.

"Any time we hear about a fatality with a remote control continuous miner, it's like being kicked in the stomach," Ken Porter, acting chief electrical engineer with MSHA's Approval and Certification Center, said.

Two years ago, MSHA teamed with Consol Energy and an engineering company called Geosteering Mining Services to find a solution.

Geosteering licensed the Hasard proximity warning system patented by the National Institute for Occupational Safety and Health. Hasard uses magnetic fields to warn workers when they get too close to moving equipment.

Geosteering President Larry Frederick, who grew up in Clay, then turned to his old friend Tommy McCormick, president of Gamma Services International in Clay.

They developed a prototype system that involved placing devices on the continuous miner that emits a low-frequency, low-power magnetic field around the machine.

The machine operator or others can be equipped with a personal alarm device about the size of an iPod that detects those magnetic waves.

If the continuous miner is moving relatively close to the people, the device sounds a chirping alarm. If the machine gets within a few feet of a person, the TramGuard stops the machine to avoid a possible accident.

"These people here truly have something," said Webster County mine operator Chester Thomas said, who allowed GSI to test prototypes at one of his mines.

"They're local people who are truly way out ahead of the pack," Thomas said.

The TramGuard was successfully tested last November at Consol Energy's Jones Fork E-3 Mine in eastern Kentucky. In January, the technology was the first proximity detection system to be approved by MSHA.

One TramGuard system is already in operation at one mine, and GSI Vice President Dwayne Towery said International Coal Group is in the process of installing and evaluating the system at its Viper Mine near Williamsville, Ill.

Other coal companies are considering using the technology. About a dozen Peabody Energy miners attended Tuesday's demonstration.

"We really want to encourage everyone to take advantage of this opportunity," MSHA's Porter said.

Cost is an issue. The price for equipping one machine and one miner is \$45,000, GSI's Towery said.

"I'm running 10 machines," mine owner Thomas said. "You're looking at a half-million dollars." He's hoping the federal government, which is pushing for improved mine safety, will provide financial support.

If demand grows enough, prices could fall, Towery said.

However they're financed, MSHA's Skiles hopes to see the detection systems proliferate in underground mines.

"This is probably one of the greatest boons to safety in modern history," he said.
"Certainly in my 36 years in the mining industry."

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